

his contemporaries were often sharp, and naturally excited aversion, and perhaps to this aversion we may refer some of the omission to receive as much credit as might be his due. But he often speaks admiringly of those he had lanced, and it is evident that, unwise in his discourtesy, it was not at any rate engendered in malice.

But he made species? Not long ago I read the introduction to a work in which the author complained that of some hundred or more species he had described, a contemporary had done him the gross injustice of not leaving him a dozen! It is no uncommon fault.

And he was an egotist? But I have lived to learn that in this respect at least "every man has his price." Let us meet in spirit around his unhonored grave in old Ronaldson Cemetery, remembering his sacrifices, grateful for what he did, and tried to do, and not forgetting that we too are but human as was he.—THOMAS MEEHAN.

EDITORIAL NOTES.

IT MAY SEEM to some that we have departed somewhat from the natural order of things in selecting Dr. Torrey as the subject of the second sketch in our series of "Some N. Am. Botanists;" but we are compelled to publish these sketches, not as we would, but as we can.

THE AMERICAN MONTHLY MICROSCOPICAL JOURNAL begins the new year with S. E. Casino, of Boston, as publisher and every evidence of prosperity. When an editor can be relieved from all clerical work his literary work is that much better and we now expect from Mr. Hitchcock a journal even more entertaining than it has been.

PROFESSOR G. MACLOSKIE, of Princeton, presented at Montreal a paper on "Achenial Hairs and Fibers of Composite," which now appears illustrated in the *Naturalist*. The object of his study seems to have been an attempt to discover some additional tribal characters, a thing very acceptable in this large and very homogeneous order. If the characters from the achenial hairs, etc., prevail it will necessitate considerable readjusting of tribes, "yet the parallelism between the structure of the hairs and the affinities of the groups, as founded on other characters, is singularly complete."

DR. L. ERRERA finds glycogen in the tissues and asci of ascomycetous fungi and also in *Linum* and *Solanum*. He has established completely the identity of the glycogen in *Peziza vesiculosa* (which he has studied most closely) and that of the mammalian liver. When not in too small quantity plant glycogen may be detected by its reaction with iodine, giving a brownish red color which disappears on heating and reappears on cooling. The discovery of the existence of this carbo-hydrate in plants breaks away another of the attempted absolute distinctions between plants and animals. Glycogen seems to perform the same functions in both organisms.

PROFESSOR DOUGLASS, H. CAMPBELL, of Ann Arbor, has been showing the development of the male prothallium of *Equisetum arvense*, and recommends its use by laboratory students as a plant that is

common and very satisfactorily studied. The growth of the fertile plant is very rapid, making the cells large and distinct. Besides, "the spores germinate very readily if sown immediately after maturing, and offer a most interesting example, in their development, of the growth and division of cells. Within a few weeks of sowing, the antheridia are produced abundantly, containing antherozoids of extraordinary size, much larger than those of the mosses and ferns."

F. PAX, after describing in detail instances of phylloidy of the carpels of *Aquilegia vulgaris* and *formosa*, states as his opinion that the two integuments of the ovule are equivalent to a leaflet. He also shows the identity of this leaflet with the pinnule of the fertile frond of a fern and in the following table expresses the homology of the parts:—

<i>Fern.</i>	<i>Ovule.</i>
Spore.	Embryo-sac.
Macrospore.	Nucellus.
Macrosporangium.	Several nucelli.
Sorus,	Ovular leaflet.
Pinnule.	

WE HAVE RECEIVED an advanced copy of the report of the Professor of Botany and Horticulture of Michigan State Agricultural College. Every botanist knows that this Professor is Dr. W. J. Beal, one of the most successful teachers of botany in this country. Dr. Beal's methods of instruction are widely known through the publication of a paper prepared by him entitled "The New Botany," a paper which has gone into the general circulation which it so well deserves through its republication by Chas. Marot, of the *Gardener's Monthly*. The report just received shows not only Dr. Beal's methods of instruction, but, what is a considerable solace to some of us, the means at his disposal. Finely equipped as he is with natural gifts, these are supplemented by appliances which are exceptional in the West, botanic garden, greenhouses, and *time* furnishing splendid opportunities for studying botany in the only right way. To those of us having no greenhouses, no botanic garden, and only about 30 hours all told, and those in a season when nature's botanic garden makes very little display, Dr. Beal's account of his methods was rather discouraging. This report shows that the author is a very busy man, but as all this hard work has brought success, he is rather to be envied than pitied.

PROF. J. C. ARTHUR has made an interesting discovery in the study of the Schweinitzian species and specimens of microscopic fungi, which throws considerable light upon what was very perplexing before. In several cases no ingenuity could make the Schweinitzian specimens agree with the descriptions undoubtedly based upon them. One illustration used is that of *Uromyces Lespedeza*, which Schweinitz described as having two-celled spores and hence included under *Puccinia*, when every student knows that the spores are unicellular. Prof. Arthur was much puzzled over such discrepancies until it occurred to him to consider the microscopes and methods of manipulation which were used by the author in question. This at once furnished the key to the riddle, for putting some dry spores of the fungus mentioned upon a slide and using

a half-inch objective, they all appeared two-celled, owing to the thickening of the apex, which often occupies half the length of the spore. This furnishes us another way of explaining the discrepancies of authors of an earlier day, without blaming them either with carelessness or wilful misrepresentation.

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